

10/19/03

=> File .Biotech
=> s (elastin or lamprin or fibrous (1) protein or peptide or polypeptide)
L1 1409487 (ELASTIN OR LAMPRIN OR FIBROUS (L) PROTEIN OR PEPTIDE OR POLYPEP
TIDE)

=> s l1 and (beta sheet or beta turn (1) structure#)
L2 16383 L1 AND (BETA SHEET OR BETA TURN (L) STRUCTURE#)

=> s l2 and (cosmetic material)
L3 5 L2 AND (COSMETIC MATERIAL)

=> d l3 1-5 bib ab

L3 ANSWER 1 OF 5 BIOTECHDS COPYRIGHT 2003 THOMSON DERWENT/ISI on STN
AN 2001-05398 BIOTECHDS
TI Novel polypeptides that comprise three **beta-sheet/**
beta-turn structures and are not naturally
occurring **fibrous protein**, used to produce prosthesis
suitable for implantation into humans, and cosmetic materials;
vector-mediated human **elastin** minimal functional unit gene
transfer and expression in host cell for recombinant **protein**
production and prosthesis transplant
AU Rothstein A; Keeley F; Rothstein S; Stahl R
PA Protein-Specialities; HSC-Res.Develop.
LO Toronto, Ontario, Canada.
PI WO 2001000666 4 Jan 2001
AI WO 2000-US17829 29 Jun 2000
PRAI US 1999-340736 29 Jun 1999
DT Patent
LA English
OS WPI: 2001-102886 [11]
AB A minimal functional unit (MFU) of human **elastin**
protein (I) containing a 671 amino acid **protein**
sequence (S1, specified), is claimed. (I) has at least three
beta-sheet/beta-turn
structures and at least 1 amino acid residue that precipitates in
cross-linking. (I) is not a naturally occurring **fibrous**
protein. Also claimed is producing a **protein** by:
expressing in a cell a **protein** containing: a domain that
enhances the solubility of the **protein**; a domain that has at
least three **beta-sheet/beta-turn**
structures and at least 1 amino acid residue that precipitates in
cross-linking and is not a naturally occurring **fibrous**
protein; and a methionine or aspartic acid residue positioned
between the domains; harvesting the cell; and treating the cell with CNBr
or a weak acid which cleaves the **protein** at each occurrence of
a methionine residue in the **protein**. (I) is useful in a
cosmetic material or a prosthetic material such as
prosthesis for implantation into humans. (39pp)

L3 ANSWER 2 OF 5 USPATFULL on STN
AN 2003:238688 USPATFULL
TI Self-aligning peptides modeled on human **elastin** and other
fibrous proteins
IN Rothstein, Aser, Toronto, CANADA
Keeley, Fred, Toronto, CANADA
Rothstein, Steven, Clive, IA, UNITED STATES
PI US 2003166846 A1 20030904
AI US 2001-964662 A1 20010928 (9)
RLI Division of Ser. No. US 1999-340736, filed on 29 Jun 1999, GRANTED, Pat.
No. US 6489446 Continuation-in-part of Ser. No. US 1997-911364, filed on
7 Aug 1997, GRANTED, Pat. No. US 5969106
PRAI US 1996-23522P 19960807 (60)
DT Utility

FS APPLICATION
 LREP FOLEY AND LARDNER, SUITE 500, 3000 K STREET NW, WASHINGTON, DC, 20007
 CLMN Number of Claims: 26
 ECL Exemplary Claim: 1
 DRWN 6 Drawing Page(s)
 LN.CNT 1005
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.
 AB A **polypeptide** is provided that has a secondary **structure** characterized by at least three **beta-sheet/beta-turn structures**, and that is not a naturally occurring **fibrous protein**. Such polypeptides, illustrated by one modeled on **elastin**, are useful in prosthesis.

L3 ANSWER 3 OF 5 USPATFULL on STN
 AN 2002:317499 USPATFULL
 TI Self-aligning peptides modeled on human **elastin** and other fibrous proteins
 IN Rothstein, Aser, Toronto, CANADA
 Keeley, Fred, Toronto, CANADA
 Rothstein, Steven, Clive, IA, United States
 PA HSC Research and Development Limited Partnership, Toronto, CANADA (non-U.S. corporation)
 Protein Specialties, Ltd., Toronto, CANADA (non-U.S. corporation)
 PI US 6489446 B1 20021203
 AI US 1999-340736 19990629 (9)
 RLI Continuation-in-part of Ser. No. US 1997-911364, filed on 7 Aug 1997, now patented, Pat. No. US 5969106
 PRAI US 1996-23522P 19960807 (60)
 DT Utility
 FS GRANTED
 EXNAM Primary Examiner: Carlson, Karen Cochrane; Assistant Examiner: Mohamed, Abdel A.
 LREP Foley & Lardner
 CLMN Number of Claims: 13
 ECL Exemplary Claim: 1
 DRWN 13 Drawing Figure(s); 6 Drawing Page(s)
 LN.CNT 1216
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.
 AB A **polypeptide** is provided that has a secondary **structure** characterized by at least three **beta-sheet/beta-turn structures**, and that is not a naturally occurring **fibrous protein**. Such polypeptides, illustrated by one modeled on **elastin**, are useful in prosthesis.

L3 ANSWER 4 OF 5 USPATFULL on STN
 AN 1999:128722 USPATFULL
 TI Self-aligning peptides modeled on human **elastin** and other fibrous proteins
 IN Rothstein, Aser, Toronto, Canada
 Keely, Fred W., Toronto, Canada
 Rothstein, Steven J., Guelph, Canada
 PA The Hospital for Sick Children, Toronto, Canada (non-U.S. corporation)
 Protein Specialties, Ltd., Toronto, Canada (non-U.S. corporation)
 PI US 5969106 19991019
 AI US 1997-911364 19970807 (8)
 PRAI US 1996-23552P 19960807 (60)
 DT Utility
 FS Granted
 EXNAM Primary Examiner: Tsang, Cecilia J.; Assistant Examiner: Mohamed, Abdel A.
 LREP Foley & Lardner
 CLMN Number of Claims: 22
 ECL Exemplary Claim: 1

DRWN 10 Drawing Figure(s); 5 Drawing Page(s)

LN.CNT 1193

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A **polypeptide** is provided that has a secondary **structure** characterized by at least three **beta-sheet/beta-turn structures**, and that is not a naturally occurring **fibrous protein**. Such polypeptides, illustrated by one modeled on **elastin**, are useful in prosthesis.

L3 ANSWER 5 OF 5 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN

AN 2001-102886 [11] WPIDS

CR 2003-391056 [37]

DNC C2001-030171

TI Novel polypeptides that comprise three **beta-sheet/beta-turn structures** and are not naturally occurring **fibrous protein**, used to produce prosthesis suitable for implantation into humans, and cosmetic materials.

DC B04 D16 D21 D22 P34

IN KEELEY, F; ROTHSTEIN, A; ROTHSTEIN, S; STAHL, R

PA (HSCR-N) HSC RES & DEV LP; (PROT-N) PROTEIN SPECIALTIES LTD; (PROT-N) PROTEIN SPECIALTIES LTD

CYC 95

PI WO 2001000666 A2 20010104 (200111)* EN 39p

RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ
NL OA PT SD SE SL SZ TZ UG ZW

W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM
DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC
LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE
SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

AU 2000057754 A 20010131 (200124)

EP 1206492 A2 20020522 (200241) EN

R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT
RO SE SI

JP 2003510249 W 20030318 (200321) 47p

ADT WO 2001000666 A2 WO 2000-US17829 20000629; AU 2000057754 A AU 2000-57754
20000629; EP 1206492 A2 EP 2000-943258 20000629, WO 2000-US17829 20000629;
JP 2003510249 W WO 2000-US17829 20000629, JP 2001-507072 20000629

FDT AU 2000057754 A Based on WO 2001000666; EP 1206492 A2 Based on WO
2001000666; JP 2003510249 W Based on WO 2001000666

PRAI US 1999-340736 19990629

AB WO 200100666 A UPAB: 20030612

NOVELTY - A minimal functional unit (MFU) of human **elastin polypeptide** (I), comprising a 671 residue amino acid sequence (SI), fully defined in the specification, is new. (I) comprises at least three **beta-sheet/beta-turn structures** and at least one amino acid residue that participates in cross-linking. (I) is not a naturally occurring **fibrous protein**.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) producing a **polypeptide**, comprising:

(a) expressing in a cell a **polypeptide** containing:

(i) a domain that enhances the solubility of the **polypeptide**

;

(ii) a domain that comprises at least three **beta-sheet/beta-turn structures** and at least one amino acid residue that participates in cross-linking, and that is not a naturally occurring **protein**; and

(iii) a methionine residue positioned between the domains;

(b) harvesting the cell; and

(c) treating the cell with cyanogen bromide (CNBr), which cleaves the **polypeptide** at each occurrence of a methionine residue in the **polypeptide**; and

(2) producing a **polypeptide**, comprising:

(a) expressing in a cell a **polypeptide** containing:
 (i) a domain that enhances the solubility of the **polypeptide**
 ;
 (ii) a domain that comprises at least three **beta-sheet/beta-turn structures** and at least one amino acid residue that participates in cross-linking, and that is not a naturally occurring **protein**, in which the N-terminus of the second comprises a proline residue, and
 (iii) a aspartic acid residue positioned between the domains, in which the aspartic acid residue forms a **peptide** bond with the proline residue;
 (b) harvesting the cell; and
 (c) treating the cell with a weak acid which cleaves the **polypeptide** at each occurrence of an aspartic acid-proline **peptide** bond.

USE - (I) is useful in a **cosmetic material** or a prosthetic material such as prosthesis for blood vessel replacements, for heart valve replacement, tissue replacement, for covering burns, for covering wounds and stents. Alternatively, the prosthesis comprises an animal, synthetic material or a metal whose surface is coated with the **polypeptide**. (I) used for **cosmetic material** comprises or consists of an amino acid sequence consisting of amino acid residues 374-499, 19-160, 188-367 or 607-717 of (S1). Preferably, (I) comprises tandem repeats of a portion of (S1). (I) preferably comprises or consists (S2), (S3) or (S4) or a 200 residue amino acid sequence (MFU-2) (S5), fully defined in the specification, preferably comprising modifications of 1-10 amino acid residues. (All claimed). The materials made from the MFUs have high tensile strength, elasticity and plasticity of their parent proteins and are useful for making cords or ropes for use in parachutes.

ADVANTAGE - The MFUs as described excel in their ability to self assemble in an ordered manner. The human-like MFU material is more compatible than other **elastin** containing material used for prostheses. The MFU is a single **peptide** of defined composition, and is considerably smaller than the parent **protein** and simpler in **structure** and therefore is easier to produce or express in large quantity, to handle in solution, and to manipulate for experimental and practical purposes. The MFU is non-thrombogenic and provides a friendly environment for cell infiltration. Being composed entirely of a human **elastin** sequence, an MFU is non-immunogenic. Coating synthetic prosthesis with MFUs significantly inhibits platelet binding and activation. The MFUs are soluble, and exhibit the property of coacervation, aligning themselves in the same manner as the parent **protein**.

DESCRIPTION OF DRAWING(S) - The figure shows the domain **structure** of human **elastin**.
 Dwg.1a/5

```
=> s Rothstein, A?/au
L4      685 ROTHSTEIN, A?/AU

=> s 12 and 14
L5      14 L2 AND L4

=> s Keeley, F?/au
L6      512 KEELEY, F?/AU

=> s 12 and 16
L7      20 L2 AND L6

=> s Rothstein, S?/au
L8      602 ROTHSTEIN, S?/AU

=> s 12 and 18
```

L9 14 L2 AND L8

=> s l2 and (l5 or l7 or l9)

L10 22 L2 AND (L5 OR L7 OR L9)

=> s l10 and (cros-link? or croslink? or conjugat?)

L11 0 L10 AND (CROS-LINK? OR CROSLINK? OR CONJUGAT?)

=> s l10 and (three beta-sheet or beta-turn (l)structures)

L12 18 L10 AND (THREE BETA-SHEET OR BETA-TURN (L) STRUCTURES)

=> dup rem l12

PROCESSING COMPLETED FOR L12

L13 6 DUP REM L12 (12 DUPLICATES REMOVED)

=> d l13 1-6 bib ab

L13 ANSWER 1 OF 6 USPATFULL on STN

AN 2003:238688 USPATFULL

TI Self-aligning peptides modeled on human **elastin** and other
fibrous proteins

IN **Rothstein, Aser**, Toronto, CANADA

Keeley, Fred, Toronto, CANADA

Rothstein, Steven, Clive, IA, UNITED STATES

PI US 2003166846 A1 20030904

AI US 2001-964662 A1 20010928 (9)

RLI Division of Ser. No. US 1999-340736, filed on 29 Jun 1999, GRANTED, Pat.
No. US 6489446 Continuation-in-part of Ser. No. US 1997-911364, filed on
7 Aug 1997, GRANTED, Pat. No. US 5969106

PRAI US 1996-23522P 19960807 (60)

DT Utility

FS APPLICATION

LREP FOLEY AND LARDNER, SUITE 500, 3000 K STREET NW, WASHINGTON, DC, 20007

CLMN Number of Claims: 26

ECL Exemplary Claim: 1

DRWN 6 Drawing Page(s)

LN.CNT 1005

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A **polypeptide** is provided that has a secondary
structure characterized by at least **three beta**
-sheet/beta-turn structures, and
that is not a naturally occurring **fibrous protein**.
Such polypeptides, illustrated by one modeled on **elastin**, are
useful in prosthesis.

L13 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 1

AN 2002:921898 CAPLUS

DN 138:16653

TI Self-aligning peptides modeled on human **elastin** and other
fibrous proteins

IN **Rothstein, Aser; Keeley, Fred; Rothstein,**
Steven

PA HSC Research and Development Limited Partnership, Can.; Protein
Specialties, Ltd.

SO U.S., 21 pp., Cont.-in-part of U.S. 5,969,106.

CODEN: USXXAM

DT Patent

LA English

FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	US 6489446	B1	20021203	US 1999-340736	19990629
	US 5969106	A	19991019	US 1997-911364	19970807
	WO 2001000666	A2	20010104	WO 2000-US17829	20000629
	WO 2001000666	A3	20010503		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
 CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,
 HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,
 LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,
 SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN,
 YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
 DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ,
 CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

EP 1206492 A2 20020522 EP 2000-943258 20000629
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, SI, LT, LV, FI, RO, MK, CY, AL

JP 2003510249 T2 20030318 JP 2001-507072 20000629
 US 2003166846 A1 20030904 US 2001-964662 20010928

PRAI US 1996-23522P P 19960807
 US 1997-911364 A2 19970807
 US 1999-340736 A2 19990629
 WO 2000-US17829 W 20000629

AB A **polypeptide** is provided that has a secondary **structure**
 characterized by at least **three beta-sheet/**
beta-turn structures, and that is not a
 naturally occurring **fibrous protein**. Such
 polypeptides, illustrated by one modeled on **elastin**, are useful
 in prosthesis.

RE.CNT 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 2

AN 2001:12490 CAPLUS

DN 134:91176

TI Self-aligning peptides derived from **elastin** and other fibrous
 proteins for use in prostheses

IN **Rothstein, Aser; Keeley, Fred; Rothstein,**
Steven; Stahl, Richard

PA Protein Specialties Ltd., Can.; Hsc Research and Development Limited
 Partnership

SO PCT Int. Appl., 39 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 3

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001000666	A2	20010104	WO 2000-US17829	20000629
WO 2001000666	A3	20010503		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
 CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,
 HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,
 LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,
 SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN,
 YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
 DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ,
 CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

US 6489446 B1 20021203 US 1999-340736 19990629
 EP 1206492 A2 20020522 EP 2000-943258 20000629

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, SI, LT, LV, FI, RO, MK, CY, AL

JP 2003510249 T2 20030318 JP 2001-507072 20000629

PRAI US 1999-340736 A2 19990629
 US 1996-23522P P 19960807
 US 1997-911364 A2 19970807
 WO 2000-US17829 W 20000629

AB A **polypeptide** is provided that has a secondary **structure**
 characterized by at least **three beta-sheet/**

beta-turn structures, and that is not a naturally occurring **fibrous protein**. Such polypeptides, illustrated by one modeled on **elastin**, are useful in prosthesis.

L13 ANSWER 4 OF 6 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 DUPLICATE 3
 AN 2000:277558 BIOSIS
 DN PREV2000000277558
 TI Self-aligning peptides modeled on human **elastin** and other
 fibrous proteins.
 AU **Rothstein, Aser** [Inventor, Reprint author]; Keely, Fred W.
 [Inventor]; **Rothstein, Steven J.** [Inventor]
 CS Toronto, Canada
 ASSIGNEE: The Hospital for Sick Children; Protein Specialties
 PI US 5969106 October 19, 1999
 SO Official Gazette of the United States Patent and Trademark Office Patents,
 (Oct. 19, 1999) Vol. 1227, No. 3. e-file.
 CODEN: OGUPE7. ISSN: 0098-1133.
 DT Patent
 LA English
 ED Entered STN: 6 Jul 2000
 Last Updated on STN: 7 Jan 2002
 AB A **polypeptide** is provided that has a secondary **structure**
 characterized by at least **three beta-sheet/**
beta-turn structures, and that is not a
 naturally occurring **fibrous protein**. Such
 polypeptides, illustrated by one modeled on **elastin**, are useful
 in prosthesis.

L13 ANSWER 5 OF 6 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 4
 AN 1998:112383 CAPLUS
 DN 128:196706
 TI Self-aligning peptides derived from **elastin** and other fibrous
 proteins for use in prostheses
 IN **Rothstein, Aser; Keeley, Fred W.; Rothstein,**
Steven J.
 PA Protein Specialties, Ltd., Can.; Hospital for Sick Children
 SO PCT Int. Appl., 40 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9805685	A2	19980212	WO 1997-CA560	19970807
	WO 9805685	A3	19980430		
	W:		AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM		
	RW:		GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG		
	CA 2262446	AA	19980212	CA 1997-2262446	19970807
	AU 9738438	A1	19980225	AU 1997-38438	19970807
	AU 728480	B2	20010111		
	EP 922058	A2	19990616	EP 1997-935396	19970807
	R:		AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI		
	US 5969106	A	19991019	US 1997-911364	19970807
	JP 2001505539	T2	20010424	JP 1998-507419	19970807
PRAI	US 1996-23552P	P	19960807		
	US 1997-911364	A	19970807		

WO 1997-CA560 W 19970807

AB A **polypeptide** is provided that has a secondary **structure** characterized by at least **three beta-sheet/beta-turn structures**, and that is not a naturally occurring **fibrous protein**. Such polypeptides, illustrated by one modeled on **elastin**, are useful in prosthesis.

L13 ANSWER 6 OF 6 MEDLINE on STN DUPLICATE 5

AN 93123269 MEDLINE

DN 93123269 PubMed ID: 7678258

TI Characterization of **lamprin**, an unusual matrix protein from lamprey cartilage. Implications for evolution, structure, and assembly of **elastin** and other fibrillar proteins.

AU Robson P; Wright G M; Sitarz E; Maiti A; Rawat M; Youson J H; Keeley F W

CS Division of Cardiovascular Research, Hospital for Sick Children, Toronto, Ontario, Canada.

SO JOURNAL OF BIOLOGICAL CHEMISTRY, (1993 Jan 15) 268 (2) 1440-7. Journal code: 2985121R. ISSN: 0021-9258.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

OS GENBANK-L05924; GENBANK-L05925; GENBANK-L05926

EM 199302

ED Entered STN: 19930226
Last Updated on STN: 19980206
Entered Medline: 19930205

AB **Lamprin**, an insoluble non-collagen, non-**elastin** protein, is the major connective tissue component of the fibrillar extracellular matrix of lamprey annular cartilage. Here we demonstrate that the soluble monomer of **lamprin** is a family of highly hydrophobic, self-aggregating proteins with molecular masses of 12 and 10 kDa. Two mRNAs for soluble **lamprin** were identified (0.9 and 2 kilobases), differing principally in the length of their 3'-untranslated tails. Variants of soluble **lamprin** appear to arise both as the products of multiple genes and by alternate splicing. Although not generally homologous to any other protein, soluble lamprins contain a tandemly repeated **peptide** sequence (GGLGY) which is present in both silkworm chorion proteins and spider dragline silk. Strong homologies to this repeat sequence are also present in several mammalian and avian **elastins**. Monoclonal antibodies to VGVAPG, a repeated sequence in human **elastin**, also cross-react with **lamprin**. We suggest that these proteins share a structural motif which promotes self-aggregation and fibril formation in proteins through interdigitation of hydrophobic side chains in **beta-sheet/beta-turn structures**, a motif that has been preserved in recognizable form over several hundred million years of evolution.

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---Logging off of STN---

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Executing the logoff script...

=> LOG Y

STN INTERNATIONAL LOGOFF AT 15:54:44 ON 19 OCT 2003